REMARKS/ARGUMENTS

This paper responds to the Office Action of July 22, 2004, and requests reconsideration of the application. A Petition for Extension of Time extends the time for response through November 22, 2004. Accordingly, this response is timely.

Claims 1-45 are now pending. Claims 1, 9, 13, 16, 22, 24, 34, and 36 are independent. Claims 21, 22 and 24 are amended.

I.   Claims 1 and 9

Claims 1 and 9 are discussed in paragraphs 5 and 6 of the Office Action. The Office Action concedes that no reference of record teaches or suggests the language of claim 1, "later writing the architecturally-visible representation corresponding to the representative value into the architecturally-visible storage location." The Office Action also concedes that Ekner '445 teaches an entirely different technique, clearing the token when it is no longer useful.

Applicant observes that every computer has a finite memory. No computer can store every intermediate signal that is generated. Thus, every computer design reflects careful choices about which signals persist for how long. Ekner discards his tokens when he determines that they are of no further use. Storing that token as proposed in the Office Action would simply clutter the computer with data that is useless to Ekner, which in turn would impose expenses and delays for genuinely useful data. MPEP § 2143.01 warns against modifying Ekner's carefully-balanced choices and principle of operation (emphasis added):

> **THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE**
>
> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references <u>are not sufficient to render the claims *prima facie* obvious</u>. ...

Here, the Office Action concedes that Ekner's "principle of operation" is to discard the token when it becomes useless. No proper rejection may alter that principle.

Further, the Office Action violates MPEP § 2143.03, which reads as follows (emphasis added):

2143.03 All Claim Limitations Must Be Taught or Suggested

To establish *prima facie* obviousness of a claimed invention, <u>all</u> the claim limitations must be taught or suggested by the prior art..

Once an element of the claim is conceded to be absent from the art, the MPEP nowhere authorizes any § 103 rejection. Any rejection must show that each element of the claim was actually known in the art. Where that element cannot be found in the primary reference, it must be shown in a secondary reference, and motivation to combine the two references must be shown. MPEP §§ 2143, 2143.01.

The Office Action likewise makes no showing of "reasonable expectation of success" after Ekner's design has been modified, as required by MPEP §§ 2143, 2143.02.

Because the Office Action omits all three elements of a *prima facie* consideration of the claim, no rejection exists.

Further, the Office Action cites no prior art that teaches the "writing" language indicated above, and no reference indicating that anyone of ordinary skill knew that it was desirable to "store an architecturally visible version" of Ekner's token information, or had designed such a form suitable for use in Ekner's invention, as proposed in the Office Action. Pursuant to 37 C.F.R. § 1.104(d)(2), Applicant calls for a reference or an affidavit showing these three facts if any rejection is raised in the future.

Because the Office Action omits consideration of essential factors, Applicant is unable to provide a direct response or showing of patentability. Further, where essential factors are omitted, the MPEP makes clear that no rejection exists. These claims may be allowed.

II.   Claims 13 and 16

Claims 13 and 16 are discussed at paragraphs 20-23 of the Office Action. Claim 13 recites as follows:

> 13. A method, comprising the steps of:
> storing a context of a first process and loading a context of a second
> process to place the second process into execution, each context comprising a set

of resources to be reloaded whenever a process associated with the context is reloaded for execution;

at least some instructions executed in a multi-stage execution pipeline of the computer maintaining results in storage resources outside the context resource set, instructions for execution by the pipeline being marked to indicate whether or not a context switch may be performed at a boundary of the marked instruction.

The Office Action is very unclear. It never shows that either Song '711 or Iyer '007 suggest "maintaining results in storage resources outside the context resource set" of claim 13. Rather than address this claim language, the Office Action skips forward to the next claim, and asserts that Iyer '007 teaches an element of claim 14. Of course, this is irrelevant to claim 13. Further, the Office Action misquotes claim 14, so the relevance of the first line of page 8 of the Office Action to either claim 13 or claim 14 is not apparent.

Further, the first line of page 8 of the Office Action misstates the content of the Iyer '007 reference. In the indicated portion of Iyer '007 (col. 5, lines 41-67), Iyer discusses "supersets" of exception handlers. As is well known in the art (see several dictionary entries, attached as Exhibit A), "exception handlers" are routines of executable instructions. Just like any other routine, exception handler routines are not "loaded" on context switch – they stay put in memory. Contrary to the Office Action, the indicated portion of Iyer '007 only discusses "supersets" of routines, never "supersets" of data as discussed in the Office Action.

Because the Office Action does not address the language "maintaining results in storage resources outside the context resource set" of claim 13, no rejection exists. Further, when correctly understood, the indicated portions of Song '711 and of Iyer '007 neither teach nor suggest "maintaining results in storage resources outside the context resource set" of claim 13, and claim 13 is patentable over these references.

The Office Action contains no discussion of "reasonable expectation of success" after Song '711 and Iyer '007 have been combined, as required by MPEP §§ 2143, 2143.02, and therefore no rejection exists.

Claim 16 recites similar language, and is patentable (and not rejected) for similar reasons.

Because the Office Action omits consideration of essential factors, Applicant is unable to provide a direct response or showing of patentability. Further, where essential factors are omitted, the MPEP makes clear that no rejection exists. These claims may be allowed.

III.   Claims 22 and 24

Claims 22 and 24 are discussed at paragraphs 31 and 32 of the Office Action. Claim 22 recites as follows:

> 22. A method, comprising the steps of:
>
> during hardware execution of an instruction stream, recognizing a condition that is a superset of a condition whose occurrence is desired to be detected, and raising a first exception as a result of recognizing the superset condition;
>
> in software, filtering the superset condition to determine whether the desired condition has occurred, and if so, gathering further information about the condition;
>
> if the desired condition is determined to have occurred, establishing a second exception to be raised after execution of further instructions of the instruction stream, and making the further information available for a handler of the second exception.

Initially, Applicant respectfully observes that the Office Action is incomplete – it points to nothing in Iyer '007 that corresponds to the "second exception," and makes no showing of inherency in the manner set forth in MPEP § 2112 ("In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art," first emphasis supplied, second emphasis in original). No rejection exists. If any analogous rejection is raised in a future Office Action, Applicant calls for a reference or an affidavit pursuant to 37 C.F.R. § 1.104(d)(2).

Further, the Office Action includes no showing of how each element of claim 22 corresponds to Iyer '007. Without that showing, Applicant is unable to respond directly to show that no correspondence exists. The omissiong prevents the existence of any rejection.

Nothing in the indicated portion of Iyer '007 indicates that Iyer '007 "gathers further information about the condition" that raised the first exception. Indeed, the case discussed at col. 5 lines 41-67 is an "unhandled exception, that is, an "unanticipated error" for which no handler is available (col. 1, line 51). If there is no handler, there is no software that can "gather information" as recited in claim 22.

Claim 24 recites similar language, and is not rejected for similar reasons.

IV.   Dependent claims

The dependent claims are patentable with the independent claims discussed above. In addition, the dependent claims recite additional features that further distinguish the art.

A number of dependent claims recite limitations that are nowhere discussed in the Office Action, or are not compared to the prior art. A few examples of the omissions of the Office Action are set forth:

> Claim 3: the Office Action makes no showing that "the later writing is triggered by the completion of the execution of the instruction" exists in any reference.
>
> Claim 5: "several other side-effects are also ready to be committed to the architecturally-visible storage location simultaneously" is not mentioned in the Office Action.
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> Claim 11: the Office Action makes no showing that "the storage location is a location in main memory or a cache memory of the computer" appears in any reference.
>
> Claim 12: the language "general purpose register" is not mentioned in the Office Action.
>
> Claim 27: "a memory reference to a narrow range of addresses, and the superset condition is a memory reference to a broader range of addresses" is not mentioned in the Office Action.

Such piecemeal examination is discouraged by 37 C.F.R. § 1.104(b) and MPEP § 707.07(g), and is unfair to applicants. Additionally, it is noted that this first Office Action is dated nearly four years after the application's filing date, when Congress suggests that examination should be completed in three. Applicatn requests that any future Office Action be complete in its consideration of any claim that is rejected, be non-final if any new issue is raised that should have been raised in this Office Action, and indicate the allowability of any claim that recites a limitation against which no prior art is cited.

V.   Information Disclosure Statements

An Information Disclosure Statement and Forms 1449 are enclosed herewith.

The Form 1449 returned with the Office Action indicates that the reference "Compaq Computer Corp., Compiler Writer's Guide for the Alpha 21264 (1999)" was not considered. However, there is no indication of why. Applicant has checked the IFW for several of the parent applications noted in the IDS, and this reference is indeed in several of the indicated parent files. Several other examiners have found it there, as indicated by their initials on Forms 1449. Nonetheless, a copy is enclosed herewith.

Consideration of all references listed in the Form 1449 is requested.
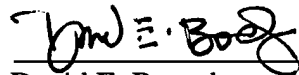
VI. Conclusion

In view of the amendments and remarks, Applicant respectfully submits that the claims are in condition for allowance. Applicant requests that the application be passed to issue in due course. The Examiner is urged to telephone Applicant's undersigned counsel at the number noted below if it will advance the prosecution of this application, or with any suggestion to resolve any condition that would impede allowance. In the event that any further extension of time is required, Applicant petitions for that extension of time required to make this response timely. Kindly charge any additional fee, or credit any surplus, to Deposit Account No. 23-2405, Order No. 114596-29-0125BS.

Respectfully submitted,

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Dated: November 22, 2004   By: _____

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